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LEADING ARTICLES

PERFORATING WOUNDS OF THE UTERUS, INFLICTED DURING THE COURSE OF INTRA-UTERINE INSTRUMENTATION.

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A. General considerations—as to nature: as to causes: predisposing, exciting.

B. An analysis of all the cases published in American, English, and French German literature from 1895 to 1907, inclusive.*

C. Conclusions.

GENERAL CONSIDERATIONS.

PERFORATIONS of the uterus can and do occur with the most startling ease. It is difficult to determine the frequency of this accident. Operators, as a rule, are unwilling to give publicity to such an occurrence happening in the course of their intra-uterine instrumentations. There is probably no gynecologist in the world of large experience, who has not met with this accident perhaps several times in his work. (Baldwin 1.) In the reports of 3172 consecutive autopsies held between February 1897, to February, 1908, at the Cook County Hospital, not one case of perforated uterus is recorded. In all the cases of abortion and in all the cases of pregnancy, treated at the same institution during the years 1903-1907 inclusive (five years) 495 abortions, 2343 pregnancies, only three perforations of the uterus occurred, 2 died (autopsy denied), one, treated expectantly, recovered. By diligently searching the American, English, French and German literature from the year 1895 to 1907 inclusive, I have been able to collect 160 cases of uterine perforations due to perforating wounds, inflicted during the course of intra-uterine instrumentation. In Rebreyend's Thèse (Paris, 1901, Les Palies perforantes del' utérus), will be found some cases not included in our table. They do not in any way affect our conclusions. So as to more intelligently discuss perforations of the uterus, it is convenient to classify them into True and False perforations.

a. True perforations may be spontaneous; that is, they may occcur without the aid of violence; may be secondary or consecutive, that is, they may follow an insult to the uterine tissues, be that insult chemical, thermic, bacterial, or traumatic in natur?

2 a, b. The perforation may follow the insult immediately, or only become established after an interval of time All uterine perforations due to perforating wounds are true perforations.

b. False, or pseudo-uterine perforations are not perforations in fact. 3 a, b, c, d. We will briefly discuss these pseudo-perforations, and then eliminate them from this paper. They have caused diagnostic errors, followed by such operative mistakes, as needless laparotomies, as removal of intact uteri. The term pseudo-perforation is used to designate a condition capable of conveying to the operator the impression that he has perforated the uterine wall, when in fact this mishap has not occurred. What, then, has occurred?

1. The uterine sound or other instrument may have slipped into a double uterus (uterus didelphys). 4. It may have entered a uterus unicornis.

2. The instrument may have slipped into the dilated uterine end of a Fallopian (5 a, b, c, d, e) tube (very rare), or into a bicornuate uterus. Watkins (5 b) after opening the abdomen found that what he had diagnosed the passage of the curette into the peritoneal cavity, was the passing of the curette into the Fallopian tube. In Hind's case, the uterine sound was introduced in the uterus before incising the abdominal wall;

*All of the literature to which I have had access.

after opening the abdominal cavity, it was seen that the sound had threaded the whole length of the Fallopian tube. It was presenting at the abdominal orifice of the tube. In Floeckinger's case (5a) laparotomy showed that the uterine sound was in the oviduct. In Thorn's cases (5 d) one uterus was myomatous, the other was latero-flexed and latero-verted. In the case of myoma of the uterus, the uterine sound was introduced 14 cm., suddenly there was a lack of resistance, hasty removal of the sound followed upon this. On opening the abdomen, it was seen that the sound had penetrated for a distance of 3 cm. into the Fallopian tube. (Ahlfeld (5 e) also reports a case in which, after laparotomy, it was seen that the left oviduct had been entered by a sound, introduced into the uterus. Notwithstanding the authenticity of these several cases, this occurrence, the introduction, by the way of the uterus, of any instrument into the Fallopian tubes, is very infrequent, so infrequent that its possibility has been denied by competent observers, because:

1st. Under natural conditions, the lumen of the uterine end of the oviduct is so small that it is only with difficulty that one can introduce a bristle into it.

2d. Under normal conditions the broad ligaments and also the ovarian ligaments maintain the Fallopian tubes in a transverse position in the pelvis.

Lawson Tait was never able on the cadaver to sound the tubes through the uterus. He maintains that under normal conditions, it is impossible to introduce by way of the uterine canal an instrument into the normal Fallopian tubes. Catheterization of the tubes is more liable to occur in the presence of such pathological conditions, as uterine latero-versions and latero-flexions, after interstitial gravidity after hematometra, etc., etc.

3. The instrument may have slipped into a small cavity, which has developed in the interior of a uterine fibro-myoma.

4. The sudden ballooning or relaxation (3 a, b, c, d) of the uterus may also convey to the operator the impression, that he has perforated the uterine wall. There is such a condition as atony of the uterus. The fact that at all periods of sexual life, the uterus has the property of alternate contractions and relaxations, is regarded as proved by all physiologists. Contraction and relaxation are properties inherent to all muscular tissues, and the uterine muscularis is not an exception to the general rule. Kieffer's experiments, bimanual examinations, etc., point to a more or less periodic variation in the tone of the myometrium.

During curettage, one often notices a uterine lengthening of 1, 2 or 3 cm. It is no longer claimed, just because the curette in these cases is not kept in constant contact with the uterine wall, that these uterine lengthenings are instances of perforations of the uterus. They are evidences of uterine relaxation. The system of uterine blood-vessels is adapted to expansions and contractions. R. De Bevis (3a) in La Semaine Medicale, Paris, 1906, Vol,. 26, p. 253, has an excellent and exhaustive article on pseudo-perforations of the uterus.

Though this condition, pseudo-perforation, is infrequent, its existence can no longer be denied. In Craig's case (6), the operator, supposing that he had perforated the uterus, opened the abdomen; he then found the uterus to be uninjured absolutely. In the case reported by N. Gheorghiu (7), the removed uterus showed no trace of perforation. Kossman (3 b) bears withness to similar facts.

Perforating wounds of the uterus, especially of the pregnant uterus can be inflicted from above (8), can occur during the course of a laparotomy, can be associated with penetrating wounds (gunshot wounds, stab-wounds and similar injuries) of the abdominal wall, of the gluteal (9) and other regions; can occur during the course of delivery. Wounds so inflicted, though they involve the same organ, though they also extend through the entire thickness of the uterine wall, demand, owing to their method of infliction, owing to their portal of entrance, owing to their almost invariable association with serious visceral or other injuries, to be considered separately from the perforating wounds of the uterus that form the subject matter of this paper.

We will consider in this article only such perforating wounds of the uterus as are due to violence inflicted from within the uterine canal; that is, only such perforating wounds in which the vulnerating agent has either been introduced through, or has traversed the cervical canal, before preforating the uterine wall. The element of trauma is essential, is indispensable to the accurate conception of these perforations.

In the course of intra-uterine instrumentations, diseased and healthy (10) uteri (cases a, b, c, d, e, f, etc), have been perforated and most disastrous results have ensued. Wounds of the uterus, like wounds of other organs or tissues, are solutions of continuity of tissue. They are always of sudden occurrence and are always due to the direct application of mechanical violence.

To avoid misunderstandings, a distinction must be made between penetrating and per-

forating wounds of the uterus. The former only enter the uterine wall; the latter traverse its entire thickness. Therefore, the distinctive characteristic of perforating wounds of the uterus is, that they involve the entire thickness of the uterine wall. All the coats, or rather layers of the wall of the uterus, are interested, the mucosa, the muscularis, and the serosa (in those portions of the uterus that are covered by the peritoneum).

The uterine perforations discussed in this article were always consecutive to some intra-uterine maneuver and always immediately so. In this class of uterine wounds, the vulnerating agent established a direct communication between the uterine and some adjacent cavity; the peritoneal cavity (11) most always; rarely, the vaginal (12, cases a, b, c) or the vesical cavity (13, case a); still more infrequently, the lumen of the gut. In other cases, the perforating instrument, after having pierced completely through a portion of the uterine wall not covered with peritoneum, enters the peri-uterine connective tissues, penetrating between the folds of the broad ligaments (parametrium) (14) (cases a. b, c). If the violence still continues to act, the vulnerating instrument may perforate one or both layers of this ligament, and thereby also enter the peritoneal cavity (15) (cases a, b). The perforating instrument may enter the visco-uterine (16) (case a); may enter and lodge in the space of Retzius (17) (case a); may enter and lodge in the Douglas' cul-de-sac (16) (case a).

Traumatic perforations can involve any portion of the uterine wall. In my two cases (19), the perforation, as is usual, involved the posterior wall; in Van Ripper's case (11), the rent was in the anterior wall; it extended from the fundus uteri to near the vaginal vault. In Harris' and Whitney's case (20), the anterior wall showed a transverse rent, about 1½ inches in length. In case 21, the uterus was perforated from horn to horn and the perforation was filled with omentum. In case 14 b, the perforation was situated at the anterior and left lateral surfaces of the supravaginal portion of the cervix. In case 22, the perforation was also in the anterior wall.

The perforation may be in the cervix uteri, as cases 23, 12 a, b, c; may be in the corpus uteri, or may involve both; may be single may be multiple (they are, most usually, single); may be small, may be large, as in case 2, in which the midwife produced a uterine rent 20 cm. long. In Ullmann's case (25) there were two perforations. In Schenk's case (26) there were three. In Werelius' case (27) the uterus contained seven punctures. The perforation may be barely visible, in one of my cases, merely a subperitoneal ecchymosis was present; may be large enough to permit the escape of a large portion of the omentum and of intestines through the rent, as in Hessert's case (28), in which four feet of gut had been pulled through the uterine rent; as in Holmes' case (29), in which intestines were found between the woman's legs; as in Congdon's case (30), in which the operator after pulling out 40 1.2 cm. of intestines into the vagina, twisted them off. In Davis' case (89), during the course of intra-uterine maneuvers, the anterior wall of the uterus perforated, and the intestines damaged to such an extent that over fifteen feet had to be removed. Hartmann (St. Louis) (91) reports an interesting case of traumatic uterine perforation in which during the course of curettage the large gut was injured and the mucous membrane of the sigmoid made to prolapse through uterine seat, "an irregular opening of the outer coats in the upper part of the rectum had been made. The mucous membrane had been seized, stripped and pulled through this opening. It was torn loose about three inches above the anus." In case 31 the operator kept on pulling intestines until he had drawn out six feet of bowel, which he cut off. This case terminated fatally. All the other cases mentioned above recovered. The perforation may be large enough to allow the escape of the fetus into the peritoneal cavity, as in Whitney's case (20). In Tait's case (33) nine months after the date of infliction of the perforation, the track of the curette could still be seen. The size and shape of the opening are to some extent dependent upon the size and shape of the vulnerating instrument.

The perforation may lead to the formation of permanent abnormal channels of communication between the uterine and an adjacent cavity, as in Dr. Lobdell's case (13), in which the perforation of the uterus took place directly into the bladder, and a permanent vesico-uterine fistula resulted; may lead to permanent prolapse of a portion of the omentum into the uterine cavity (cases 34 a and b). Usually, after the infliction of the injury, the vulnerating agent is removed. In some of the reported cases, exceptional cases, I admit, it was abandoned in place, and was either expelled per vaginam or eliminated by the aid of a slowly ulcerative, suppurative or other pathological process, through newly created avenues. The perforating body may be eliminated through the rupture of a near or of a distant abscess, or may be removed at an operation, cases 35,

11 a, or at autopsy, case 36. In one of Treub's cases (17), the bougie was imbedded in a retro-uterine abscess. In his other case (17), he removed by an incision, the perforating catheter from the space of Retzius. In Johnson's case (7), the patient was laparotomized and the bougie, cause of the perforation, was found to be almost entirely folded in and covered by the omentum, an evidence of the effort of nature to repair the damage and to prevent injury of the abdominal viscera. In Thorn's case (18) the perforating bougie, after the patient had been laparotomized, was found lying obliquely in Douglas' cul-de-sac. In Talmey's case (10 f), the perforating bougie was found lying in front of the proximal edge of the right kidney. In Bullard's case (38), the crochet hook was discharged through the anterior abdominal wall. It did not interfere with the continuance of gestation. In Perl's case (24), the needle or trocar that had perforated the uterus, was removed, some time after, from an abscess in the right ingiunalregion where it had become encysted, after its passage through the uterine wall. In Fairchild's case (39), at laparotomy, the hairpin was found, high up, in the abdominal cavity, near the diaphragm. In Patru's case (14a), the perforating catheter was found imbedded in an abscess palpable through the anterior rectal wall. By means of an incision made in the anterior rectal wall, all the pus was evacuated and the bougie removed. In Marchand's case (40) a, Hegar's metallic dilating bougie No. XII perforated the uterus and was abandoned in the patient's body. After about a year of invalidism, she was laparotomized, and the sound was found between two folds of mesentery. It was removed, recovery ensued.

Any instrument that can be used or misused in the uterine cavity is capable of perforating the uterine wall. All forms of uterine sounds, of uterine dilators, of curettes (the St. Cyr Augur (41 a and b) curette included) can be incriminated. In the case No. 41 b, thirty-one inches of gut had been torn away by the augur curette. In the cases reported during the last ten years, it is stated in unmistakable terms, that the vulnerating instrument was:

1 Uterine douche tube, irrigator, catheter, 12 cases.
2. Uterine bougie, uterine sound, 17 cases.
3. Uterine dilators, 31 cases.
4. Uterine curette, 44 cases.
5. Miscellaneous agents, 50 cases.

In other cases, the offending agent is either not stated or happened to be either a probe (case 38), a wire (case 39), a meat skewer (case 15 b), an electrode (case 18).

Perforating wounds of the uterus are always of accidental occurrence. Nowadays they are never intentionally inflicted. They have occurred in the hands of the most dextrous, of the most clever operators. The accident has occurred to Lawson Tait (case 33), Auvard, Paris (42), had one perforation in 270 uterine curettements. It cannot always be stated that they are due to ignorance, to incompetence, to carelessness. But it can be said that in the hands of a novice, in the hands of the careless, in the hands of the surgically unclean, all intra-uterine instruments are dangerous. It can also be stated that in most of the cases in which death has followed upon uterine perforation, the perforating instrument had been introduced for criminal purposes. In 26 of the cases analyzed in the preparation of this article, the perforating instrument was introduced to end an undesired pregnancy. In some of the fatal cases where the perforating instrument was not introduced for criminal purposes, it has been guided by unclean hands.

In 1873, L. E. Dupuy (43) said: "I have found reported 17 cases in which the uterine wall has been perforated from within. In some of these cases, the uterus has been perforated at more than one point. All these patients made uneventful recoveries, in none were any measures taken either before or after the accident, to prevent the development of complications." In 1878, Carle Liebman 44) in reporting two cases of uterine perforations, treated expectantly and terminating in recovery, reviewed the subject quite exhaustively. In this article, Liebman makes the following statement: "In not one of the cases reported in the medical literature, and they exceed thirty in number, was the perforation of the uterine wall followed by alarming symptoms". Liebman compares the accident to paracentesis, to exploratory punctures of organs, procedures which are generally considered harmless. Lenoir (45) says: "These perforations have proved interesting to us, not only on account of their frequency, but also on account of their innocuousness."

Lawson Tait (33) had never seen any ill results follow perforations of the uterus by a uterine sound. In not one of the reported cases, in which the perforating instrument was a sound, did death occur. The sound is a much less dangerous instrument than the curette. It makes a smooth hole, while that made by the curette is apt to be ragged. The afore mentioned authors conclude from their study of the literature and from their

personal experience that perforated wounds of the uterus are relatively benign, are unattended with danger. Their opinion is erroneous and is completely disproved by the study of the literature of the subject that has been published during the last twelve years.

The dangers of perforating wounds of the uterus are manifold. Independent of the danger of shock, there is the danger of hemorrhage into the pelvic and general peritoneal cavities, into the pelvic connective tissues, of injuries to the peritoneum, of injuries of the intra-abdominal organs, etc. In twenty-three of the fatal cases, it is definitely stated that a diffuse suppurative peritonitis was present. There is danger of traumatizing the omentum, of traumatizing the intestines. In 35 cases, it is stated that positive injury was inflicted to the intestines or to the omentum. Any of these dangers can prove fatal. In Donald Macrae's case (10 b) the patient bled to death. She died three hours after the infliction of the perforation. The uterus, in this case, showed practically no pathology. Several months before, patient had had a miscarriage. At the time of the perforation, twenty-eight inches of intestines were pulled out through the perforation and twisted off by actual force. Shock, hemorrhage, visceral injuries and infection may be associated in the same individual case. If a large tear has been made in the uterus, there is danger of a loop of intestines or of a part of the omentum slipping into the rent and becoming strangulated (cases 11, 20). The gut may only be incarcerated, not strangulated in the rent (case 46). In Kustner's cases, (34 a and b) the omentum escaped into the uterine cavity. Following these two (Kustner's) unrecognized cases, prolonged and irregular uterine bleeding occurred. Eventually, vaginal hysterectomy was done in both cases, and on section, each uterus was found to contain grape-like pieces of omentum. The omentum may plug the uterine perforation (21, 47). In cases of perforation of the posterior wall of the uterus, near the fundus, if the omentum hang low into the pelvic cavity, it is very liable to become entangled in the curette and drawn through the perforation into the uterine cavity, even into the vagina. If the patient recover from the perforation, the site of the cicatrix, apparently, does not interfere with the subsequent development of pregnancy, as evidenced by cases 22, 27, 28, 47, 48, 49, 50. In one case (27) though the uterus had been perforated at seven different places, patient subsequently became pregnant and was delivered of a living child. In one case (47), the site of perforation was sought at the time of delivery in a subsequent pregnancy. No trace of it could be found. Henck's case (5) is the only case reported, in which the perforation is said to have enlarged at a subsqeuent pregnancy and to have complicated delivery.

How can the frequency of these perforations be lessened? How can the morbidity and the mortality, incident to their occurrence, be lowered?

A. By the non-employment of inappropriate or defective instruments.

B. By never entering the uterine cavity in the absence of indications.

C. By never entering the cavity of the uterus in the presence of contra-indications, such as pus in the tubes, the ovaries or around the uterus, as in acute gonorrheal endometritis, in acute septic endometritis, etc. The existence of an extra-uterine pregnancy is a contra-indication to curettage.

D. By perfecting our surgical technique.

E. By familiarizing ourselves with the conditions that predispose to the occurrence of uterine perforation. For instance, in removing pedunculated uterine submucous fibroids, the peritoneal cavity is liable to be opened as in cases 46, 52 a and b.

In a few words, by keeping in mind in connection with intra-uterine work, that there are:

Dangerous instruments;

Dangerous uteri;

Dangerous maneuvers.

The use in the uterus by inexperienced hands of placental forceps is always dangerous. It is needless, as the finger can do more effective work. Even the finger has difficulty, at times, in differentiating between placental tissues, blood clot, and intestines. The uterine sound or hysterometer is an instrument of very little usefulness. In most cases, the size, mobility, and position of the uterus can be better and more safely determined by bimanual vaginal abdominal examination. Laminaria tents should be always as long as the uterus; otherwise, the lower end of the laminaria, instead of projecting a little below the external os, is liable to slip into the uterine cavity. Should then the long axis of the laminaria not remain exactly in that of the uterine cavity, the lower end of the tent becomes impinged against the uterine wall. The uterine contractions may drive that end partly or entirely through the uterine wall. The use of laminaria tents produces a more gradual dilation of the cervical canal. This is an advantage, which, in our opinion, is counterbalanced by the fact that the patient has 16 or 24 hours of pain. We believe that tupelo tents can with advantage be banished

from the gynecologist's armamentarium. The danger of infection from the use of tents is great (Dudley, Chicago, Kelly, Baltimore).

The three bladed steel dilator is considered dangerous. It has been nicknamed "the perforating dilator" (case 53). Its use is to be discouraged. Hegar's graduated metallic dilating bougies are serviceable instruments. They should not be introduced much beyond the external os. Their function is to dilate the cavity of the cervix uteri, not that of the corpus uteri. It would be advisable that they be marked off in centimeters, so that the operator would know at all times how deeply they are introduced. Whenever the fundus uteri is perforated by a Hegar's dilator, the operator is to blame.

As to uterine curettes, there does not seem to be any pattern which cannot, suitable conditions being present, determine a perforation of the uterus. The blunt and the sharp, the fenestrated and the non-fenestrated, the even-margined and the sinuous margined curettes are each reported as having perforated the uterine wall. It is better to use a curette, the shank of which may be bent like a probe, so as to be made to conform to the direction of the uterine canal. A curette which is pliable and curved and broad above is less liable to cause perforation, than one which has a narrow upper end and which is rigid and straight. Some models of fenestrated curettes are very apt to catch muscular tissues.

The introduction into the uterus of the finger or of instruments should not be regarded lightly. With but few exceptions, all these perforations have occurred during the operations of dilatation of the cervical canal or during that of curettement of the uterine cavity. These two operations, cervical dilatation and uterine curettage, when performed with due precautions as to asepsis, as to preoperative preparation of the patient, such as emptying of the lower bowel and catheterization of the urinary bladder, are, relatively, of great simplicity of technique, of great benignancy and of great efficiency. Following their performance, judicious after-treatment is of great importance and should not be overlooked. These two operations should not be performed in the absence of positive indications. They are better performed with the aid of an assistant.

The indications for dilatation of the cervical canal are:

1. As a preliminary measure to (a) intra-uterine exploration. (b) uterine curettage and other intra-uterine maneuvers.

2. As a therapeutic measure in dysmenorrhea.

Dilatation or divulsion alone is not to be considered a specific for dysmenorrhea. A considerable number of cases of dysmenorrhea are not in the slightest degree benefited by this operative procedure. In the marked dysmenorrhea, at times, associated with uterine anteflexion, Dudley's operation will be found very serviceable. In dysmenorrhea, due to stensois of the extrenal os, Pozzi's operation is valuable. Dilatation alone, is valueless in the treatment of dysmenorrhea due to any of the various malpositions of the uterus. We must treat the cause or the causes which determine the occurrence of the symptom—dysmenorrhea.

The indications for uterine curettage are:

1. To remove placental debris, etc. 1. To remove placental debris, etc. In this connection, let us state that in the opinion of such men as Coe, Pinard, etc., the aseptic finger, is the best instrument to introduce into the puerperal uterus for the purpose of removing decidual remnants and blood clots. Pinard, for the post-abortum removal of placental debris, rejects the use of the curette and teaches that in all cases of retained secondines, the finger should be employed for their removal. He considers it safer and more thorough. There are limits, however, to the power of the human digits and, at times, the curette will be found a valuable auxiliary to the finger. For the exploration of the uterine cavity, the finger, by virtue of its tactile sensibility, is far superior to any instrument. The curette is a blind agent (LePage, Pinard, Budin).

2. As an aid to diagnosis.—In decidual endometritis, uterine tuberculosis, carcinoma, chorion-epithelioma and other intra-uterine inflammatory or neoplastic processes, the use of the curette as a diagnostic aid is a recognized and sanctioned procedure.

Where carcinoma of the corpus uteri is suspected, the curette must be used with great precation and only to remove small pieces for diagnosis. Again, in those cases, where curettage has been previously performed, great care, great gentleness is necessary, because it sometimes happens, that the uterine wall has been previously too deeply scraped, and then the danger of perforating the organ is imminent (54, 55 a and b).

3. To remove abnormal endometrium, causing dysmenorrhea and sterility; to induce involution of the uterus. As to whether it is wise to curette an empty septic uterus following on labor or abortion, clinicians differ. Naturally, if the uterus contains retained placental tissue, this must be re-

moved. If the curette is used, venous sinuses and lymphatic channels are opened and the protecting barrier of leucocytes is interfered with and possibly removed in places. Further, the Fallopian tube may thus also become infected.

4. To remove the remains of a mole pregnancy.

5. In the treatment of inoperable carcinoma of the cervix. In this condition, septic absorption is one of the common causes of immediate distress. Curetting the fungating mass and subsequent treatment of the raw surface with strong formalin, frequently does away with sepsis, hemorrhage and pain.

C. What are some of the contra-indications to utero-cervical dilatation or to uterine curettage?

a. The absence of a positive indication.

b. The presence of a suppurative process, either in the uterus, in the uterine adnexae, in the parametrium or in any other pelvic organ or structure.

c. The presence of such conditions as phlegmasia alba dolens, of uterine or peri-uterine thrombo-phlebitis. The curette is liable to disturb the thrombi in the uterine veins, at the placental site, or in the plexus pampiniformis (Byron Robinson) (56).

D. By perfecting our surgical technique, the occurrence of this accident, perforation of the uterus, will become a rarity.

Before undertaking any intra-uterine maneuver, determine:

a. By vaginal examination.

b. By bi-manual, vagino-abdominal examination.

1. The presence or absence of adnexal or periadnexial disease. Curettement has determined the rupture of tubal, peritubal, ovarian, peri-ovarian and peri-uterine pus collections. Even the pulling down of the cervix by tenacula, has ruptured pus collections.

2. The size, the shape, the mobility and the consistency of the uterus. If the uterus be bound down or immobile as a result of adhesions due to previous pelvic inflammatory processes, it is far more liable to be perforated. Under such conditions, it does not yield to the impact of the uterine instrument, it does not accommodate itself to the pressure exerted by the sound, curette, etc.

3. The presence or absence of tumors upon or within the uterus.

4. Some operators further recommend that the depth and direction of the uterine cavity be determined by the careful use of the graduated uterine sound or by the hysterometer and that any deviation from the normal be noted. The use of the uterine sound as a means of ascertaining the depth and direction of the uterine cavity is condemned by most operators. They rightly claim that the same information can be more safely determined by bi-manual vagino-abdominal examination. In case 57 the uterus was anteflexed; in cases 12 c, 57 and 58 a and b, it was retroflexed. In case 59 it was retroverted, in case 45 it was anteverted, in case 60 latero-flexed. All malpositions, congenital or acquired, of the uterus, if recognized, predispose to perforation during the course of intra-uterine maneuvers.

Malposed uteri are most frequently perforated opposite the point of angulation.

The nutrition of the uterine tissues being impaired at the point of flexure explains the not uncommon occurrence of perforation at this point. In a retroflexed uterus, it is the anterior wall which is more liable to be perforated; in an anteflexed uterus, the posterior wall.

5. Get a mental picture, as clear as possible, of the pelvic organs. Having a definite mind picture of the pelvic conditions existing in the individual case, if a uterine perforation occurs, it is more immediately recognized and one desists from further intra-uterine instrumentation. For instance, suppose that in a given case the uterus has, by examination, been determined to be normal in size, in volume, and in position, and that during the introduction of the uterine instrument, the latter slips much to one side of the median line and to a depth greater than that of the uterine cavity, perforation will then immediately be diagnosed.

6. Observe the most rigid asepsis during the course of the operation and see that from the standpoint of asepsis and antisepsis, the patient has been prepared as carefully as though you were going to perform a laparotomy. A complication, necessitating a laparotomy, may suddenly arise. In uterine wounds, be they inflicted by the sound, by the uterine dilator, or by the curette, you must minimize, you must avoid the liability of implantation of infection. Not much can be done to cure existing infection. Much can be done to prevent the occurrence of infection. The endometrium sits directly on the myometrium without an intervening sub-mucosa, to check endometrial infectious invasion.

Chief amongst the pathological states that predispose to the occurrence of perforating wounds of the uterus are the following. The changes (hyperemia, softening, etc.) present in menstruating, in pregnant, in puerperal and in post-abortum uteri. Perforation is favored by the peculiar state of the muscular tissue of the puerperal uterus.

In curetting congested, softened uteri, such as are met after abortion and after childbirth, no attempt should be made to elicit the uterine "cry" (le cri utérin) (61), that is, the peculiar creaking noise, due to the forcible scraping of the uterine wall by the curette. In these cases, owing to the softness and friability of the uterine wall, this sound is not obtainable.

Perusal of the reported cases, the bibliography of which appears at the close of this article, discloses that 14 puerperal uteri were perforated, 7 deaths resulting; that either in the attempts at abortion, or in efforts to overcome some of the accidents following on an abortion, sixty-five uteri were perforated, 25 deaths resulting. After delivery at term, the thickness of the muscular wall, according to Tarnier, is from 2 to 5 mm. (62).

b. Atrophy of the uterus. (63). All the different forms of uterine atrophy, of themselves cause a weakening of the uterine wall, and therefore can be looked upon as conditions predisposing to uterine perforation. Atrophy of the uterus has been observed in some chronic diseases: as in pulmonary tuberculosis, occasionally in diabetes, in leukemia, in chlorosis, in pernicious anemia, in Addison's disease in Basedow's disease etc. It is stated that also in certain acute infectious diseases such as typhoid fever, a marked atrophy of the muscular tissues is noted.*

We will enumerate the main histo-anatomical changes that have been noticed in senile atrophy of the uterus and those found by Emil Ries (Chicago) in some cases of marked atrophy following puerperal infection.

The changes found in senile uteri are:

a. Atrophy of the mucosa and of the muscle fibres.

b. The relation, in amount, normally existing between the connective tissue and the muscular tissue is altered considerably at the expense of the latter.

c. Vessels are sclerosed. Case 33 was a senile uterus. It was also the seat of myomata.

Emil Ries, Chicago, in some cases of extensive atrophy of the uterus, following puerperal infections, found:

a. Absence of mucosa;

b. Hyaline degeneration and thrombosis of the vessels.

c. Degeneration and necrosis of the muscularis.

*There are other unusual pathological states of the muscular uterine wall that predispose to perforation, such as for instance existed in Halban's case (64) and in others, Lack of space forbids us to discuss them here.

Malignant neoplastic diseass of the uterus is of frequent occurrence. The cases of carcinoma or sarcoma of the uterus, in which perforation of the uterus has resulted from slight mechanical stress, are numerous.

Efforts in the presence of malignant disease of the uterus to obtain material for microscopic examinations, if brutal, may prove disastrous. Malignant disease of the uterus may give rise to spontaneous preforations (65).

d. Inflammatory processes of the uterine tissues may be localized; may be diffuse. Like inflammatory processes elsewhere, they are destructive in nature. Whatever be the nature of the inflammation, acute or chronic, or the site, be it located in the mucosa, in the muscularis or in the connective tissues, it invariably weakens the resistance of the uterine wall. Case 66 was a case of myometritis edematosa; case 67, a case of endometritis fungosa. In case 68, sutures from a previous operation, were suppurating their way through the uterine wall.

Prolonged septic processes predispose to uterine perforation. Tubercular uterine inflammation by leading to abscess, to cavity formation, can of itself cause uterine perforation.

Inflammation of the uterus may terminate in resolution, in ulceration, in suppuration, or in gangrene. We will briefly consider abscess (69 a, b, c, d) of the uterus and also gangrene of this organ, as several instances will be found in our tables, where these conditions, either together, or separately, were present. The occurrence of abscess of the uterus is no longer contested, as many of the cases reported have been amply verified (70 a, b, c). Uterine abscesses may be acute, subacute, or chronic; may be primary or secondary; in the primary form, the pus collection has its starting point as such in the uterine tissues; in the secondary form, the suppurative process starts in neighboring tissues and invades the uterus by extension through continguity. In the first form, at the beginning, if not throughout its entire course, the pus collection is entirely circumscribed by uterine tissue; in the secondary form, it is partly surrounded by the uterine tissue, partly by other tissue.

In number, these abscesses may be single, may be multiple. In location, they are either submucous, intra-muscular or interstitial, or sub-peritoneal. Their site may be in the anterior wall (70 c); may be in the posterior wall (70 b). Uterine abscesses are always due to infection; a pathological, surgical, or traumatic solution of surface continuity of the uterine mucosa serving most frequently as the portal of infection.

Any pyogenic organism, facultatively or habitually so, can be the causative germ. Tubercular abscesses have been reported. In Menge's case (69 b), gonococci were detected in the pus. Nevertheless, the ordinary pyogenic cocci are the most frequent offenders. The germs are either implanted in the uterine tissues by a vulnerating instrument, or may be conveyed to the site of abscess development by the lymphatic vessels. Rarely the abscess- is embolic. The abscess maybe secondary by contiguity of tissues to an infective uterine thrombophlebitis (infective thrombo-phlebitis, suppurative peri-thrombo-phlebitis, abscess). The liability to the latter, (septic thrombophlebitis) occurrence during the post-abortum period is well known.

All uterine abscesses impair the solidity of the uterine wall.. They predispose to traumatic perforations, as the abscess site forms a circumscribed area of lessened resistance. They may rupture spontaneously into the rectum (Bird's case, Schroeder's case), into the bladder (Berrut's), into the uterine cavity, into the pertioneal cavity, etc. They may give rise to spontaneous perforations, as when the abscess ruptures both into the uterine cavity and into an adjacent .cavity or space. We have in the case reported by Porak (70 a) an instance of spontaneous uterine perforation due to an abscess. This was a case of puerperal sepsis. The uterus contained several abscesses, one of which had ruptured both into the uterine and into the peritoneal cavities. In one of Mauclaere's cases (17) at the seat of perforation, there was an abscess, which extended nearly to the peritoneal coat.

Another possible termination of uterine inflammation, which predisposes to perforation, is gangrene. Uterine gangrene may be circumscribed, may be general, may involve the entire thickness of the uterine wall, may only involve apart of its thickness; may be due to traumatic, inflammatory, neoplastic, or to chemical causes. It may be secondary to criminal or other intra-uterine maneuvers; it may be spontaneous. Gottschalk (28) reports a case of gangrene of the uterus (puerperal sepsis) in which the necrotic tissue represented the whole uterine mucous membrane and a portion of the muscular walls. He thinks that in this case the gangrene was due to intra-uterine injections of 60 per cent alcohol. Cases of gangrene, due to contact of caustics with the uterine wall, are reported.

Gangrenous metritis is a condition which predisposes to traumatic uterine perforation; which may result in spontaneous perforation. Boeckman, St. Petersburg, noted this grave complication six times in forty cases of metritis dissecans. Metritis dissecans is the condition which we now designate as gangrene uteri puerperalis.

It may be partial, it may be total, it may be perforating.

On examining the organ, it is at times difficult to determine if the perforation is secondary to the gangrene, or, if the gangrene is secondary to an inflammation, started by an instrument which has penetrated the uterine wall (73). In Winter's case (74), the gangrene was secondary to a perforation. It was located on the posterior wall; there was a marked predominance of saprophytic germs The inflammatory gangrene enlarges the traumatic lesion and may lead one to think that the perforation is spontaneous in orgin. Maygrier (75) reports two cases of post-abortum gangrene. Each had led to a uterine perforation. Trauma as a factor was absent in both. K. Schmidlechner reports a case of gangrenae uteri puerpealis, involving the entire cervical wall and the lower half of the musclar wall of the body of the uterus.

CONCLUSIONS.

1. Psuedo-perforation of the uterus, though of exceptional occurrence is a condition that occasionally confronts the surgeon.

2. Spontaneous perforations of the uterus, due to pre-existing pathological conditions of this organ can and do occur.

3 Perforating wounds of the uterus, be they intra-peritoneal, or extra-peritoneal, have a morbidity, have a mortality. This morbidity, this mortality, increases in direct ratio with the inexperience, the carelessness the surgical uncleanliness of the operator. The expert recognizes at once the making of a false passage and institutes proper treatment. High surgical skill may convert (as a consultation of the articles enumerated at the close of this paper amply demonstrates) an apparently hopeless case into a recovery. In the 160 reported cases, there were 42 deaths, 108 recoveries. The result is not stated in 14 cases. Expectant treatment was pursued in 66 cases. There were 21 deaths in this series. Laparotomy, including what intra-abdominal repair work appeared necessary to the operator, was performed 72 times. There were 52 recoveries, 17 deaths, and 3 unstated results in this series. Vaginal hysterectomy was done 15 times. There resulted 10 recoveries, 4 deaths, and one result not stated.

4. Dilatation of the cervical canal, and instrumental curettage of the uterine cavity are, owing to their associated dangers, not

office operations. During the performance of either of these two apparently danger-free operations, the operator may be confronted by accidents, the meeting of which requires the highest surgical skill. In their performance, if an anesthetist be available, the employment of general anesthesia (in the absence of contra-indications) is highly desirable, in fact, the rules should be:

a. No uterine curettage without general surgical anesthesia. It is easy to conceive how an unanaesthetiezd patient can, by injudicious jerks or movements, perforate her own uterus, by impaling it, by spiking it upon the intra-uterine instrument. Anesthesia permits the operator the depress the abdominal wall, to locate, to fix, if necessary, the fundus uteri.

b. No curettage without ample cervical dilatation. A non-dilated cervical canal interfers with the tactile sense and thereby with the proper maneuvering of intra-uterine instruments. Steady the cervix, before beginning the dilatation of the canal.

6. Intra-uterine instrumental maneuvers should only be attempted by those:

a. Who are thoroughly conversant with modern surgical asepsis and asepsis. The absence of bacteria on the perforating instrument minimizes very much the dangers of perforation. Infection has immediate, has late dangers. In an uncomplicated perforating wound of the uterus, the traumatism of the uterus plays but a secondary role; the pre-existance, or the implantation, at the time or subsequently, of infection commands the situation.

b. Who are capable of recognizing malpositions of the uterus as well as pathological conditions of that and of neighboring organs. Even the bringing of the cervix to the vulva and outlet may disturb peritoneal adhesions, may rupture pus pockets.

c. Who are acquainted with the dangers incident to the successive steps of the intra-uterine operation, which they are performing. The steel dilator is an instrument of too much power, and the curette is too dangerous a weapon to be used by the novice, by the inexperienced.

7. Once the uterus is perforated, all further instrumentation must be suspended. If it be imperative that the contents of the uterine cavity be removed, this must be done by digital curettage, or it may be done with a curette, whilst the uterus is being watched from above, through a laparotomy incision.

8. A perforated uterus should never be mopped or swabbed with caustics or irritating antiseptics. It is needless, it is dangerous. In two cases (38, 77), it is distinctly stated that the uterine cavity was swabbed. Both cases died. In each, carbolic acid was the agent used.

9. A perforated uterus should never be irrigated. In 17 cases in which it is stated that the uterus was irrigated during the course of perforation or afterwards, there were 6 recoveries, cases 17, 49, 57, 78, 79 and 11 deaths, cases 22, 47, 63, 80, 82, 83, 83. In two of the recoveries (cases 39 and 57) convalescence was delayed by mercurial poisoning, due to the sublimate solution, that had been used for uterine irrigation. In case 78, one ounce of a one per cent aqueous solution of creolin entered the peritoneal cavity. Brothers in his report of cases 22, in which the perforated uterus was irrigated, states "I have never seen a case of greater physical suffering in my life". The great danger attending intra-uterine irrigation in these cases is the conveyance, the diffusion by the irrigating fluid of septic material from the uterine into the peritoneal cavity or other space. Owing to the great absorptive power of the peritoneum, the danger of chemical intoxication is also present. Every case, in which it is definitely stated that the perforated uterus was not irrigated, recovered (10 a, 12 c, 19, 22, 29, 31, 33, 47, 67, 71, 85,86 a).

10. Vaginal hysterectomy is an operation not to be performed in the treatment of perforating wounds of the uterus. It calls:

1. For the sacrifice of an organ which may not be perforated.

2. For the sacrifice of an organ, which though perforated, most always can, with little difficulty to the operator and with much advantage to the patient, be saved.

3. It does not enable the operator to either exactly determinate the presence or absence of other co-existing intra-abdominal vascular or other lesions, nor does it enable him to repair them.

11. If the perforated wound has been inflicted upon a non-septic uterus during the course of an aseptic intra-uterine maneuver, in the absence of complicating abdominal lesions, recovery is the rule.

12. The treatment of perforating wounds of the uterus is determined largely by the following conditions:

1. The septicity or asepticity of the uterus and its contents.

2. The septicity or asepticity of the perforating instrument.

3. The presence or absence of co-existing vascular, omental or intestinal lesions.

4. The size and the number of the perforations. A piece of omentum may prolapse through a large rent. A coil of gut may become incarcerated or strangulated in a large perforation.

13. Treatment:

a. If the uterus be non-septic, if the perforating instrument be aseptic, and if it can also be reasonably assumed that there is an absence of omental or intestinal or important vascular lesions, the treatment to be followed is one of "armed expectancy". The patient must be confined to bed and immobilization enjoined for at least three days. The patient's pulse, temperature, facies and abdomen must be carefully watched. A suppurative cellulitis, signs of internal hemorrhage, etc., call for intervention. A wick of gauze may be inserted into the uterus but it should not be introduced much beyond the internal os.

b. In all cases in which there has been a prolapse of the omentum, or of intestines into the uterine cavity; in all cases in which associated injuries to the intestines or omentum co-exist, or in which there are reasons to fear a significant internal hemorrhage, laparotomy is urgent.

c. Once the abdominal wall has been opened the visceral lesion must be repaired. The uterine puncture, if small, need not be sutured. If large (when the perforation is large you cannot depend upon the contractility of the uterine muscle, to entirely occlude it) if of the nature of a tear, of a lacation, it is better that it be sutured. One or two layers of sutures may be used. Whether small or large, if the perforation be the seat of hemorrhage suturing is indicated. In the following cases, the operators deemed it wise to suture the perforation. Cases 10a, 14c, 20, 22, 31, 47, 50, 84, 87, 88, 89 a, 89 b.

All these cases recovered excepting cases 10 a 20 and 89 a. Complicating intestinal lesions necessitating resection of gut and interorrhaphy were present in each of these three fatal cases. Some operators as Jarman (case 84) made use of both superficial and deep sutures. Some clinicians teach that every perforating wound of the uterus calls for a laparotomy. They base their teaching upon the following considerations:

a. That the exact size of the perforation is not known.

b. That hemorrhage may be taking place from the peritoneal surface of the wound.

c That in the absence of a laparotomy one can never tell with certainty whether any intra-abdominal organ is injured.

14. A healed perforation of the uterus apparently does not interfere with the normal development and the normal termination of a subsequent pregnancy.

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JOHN McH. DEAN, M. D., Surgery.
ROBT. H. DAVIS, M. D., Dermatology.
W. E. FISCHER, M. D., Ophthalmology.
R. B. H. GRADWOHL, M. D., Pathology.
A. F. KOETTER, M. D., Oto-Laryngology.
O. E. LADEMANN, M. D., Internal Medicine.
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O. H. BROWN, M. D., Tuberculosis.

Editorial Rooms, Suite 319-321 Century Building, St Louis.

EDITORIAL

TUBERCULOSIS has occupied the serious attention of more physicians, and has had more study by real scientists during the past decade than many times the number of years previously, and it is safe to say that the profession comes nearer to a real understanding of the disease and how to control it than it had ever hoped to do. But the public still thinks that the fledging or the irregular who advertises his wonderful "cure" is worthy of credence in preference to the legitimate profession. The unknown someone with an equally unknown serum or cure, is hailed as a wonder worker, and his following leads one to occasional doubts whether disinterested efforts along the lines of preventive medicine and intelligent therapy will ever be properly appreciated by those in whose behalf they are undertaken. We are hearing much of the mutual interests of the pharmaceutical and medical professions, yet there are few drug stores which do not lend themselves to the rankest forms of quackery. The latest, and the occasion of this, is the following: Some time since a doctor located in the Century Building, St. Louis, and very shortly elevator boys, scrub women and various of the underlings were spreading abroad the news that he could cure consumption at any stage, and was doing it; later we were told that one of the foremost druggists of the city was in partnership and was backing the cure; of the truth of this we cannot say, but this was the man who held the stakes in the later development. Now comes the following in the St. Louis Times of January 14th:

"How Long, O Lord, How Long?"

"Dr. Charles O. Wright, 1356 Blackstone avenue, was arrested Thursday at his office, in the Century Building, on an indictment charging him with obtaining money under

false pretenses from Paul F. Walter, a mail clerk, 4535 Evans avenue.

"Walter says he deposited $250 which the doctor was not to claim until he had cured Walter of tuberculosis. The doctor later received the money, and in a statement made at police headquarters, avers Walter was cured and then by working nights and studying days, impaired his health. Walter's condition now, Dr. Wright says, is the result of overwork."

"Walter went to Dr. Wright in August, 1907, and claims the doctor agreed to cure him if he would deposit the money with H. C. Duering, a druggist, Ninth and Pine streets. "In May, 1908, Dr. Wright presented his claim for the money and says members of the Board of Health had pronounced Walter cured. In December, 1908, Walter went to the druggist and asked for his money, saying he was getting worse and was going to quit the treatment. Learning the money had been paid to the doctor, Walter complained to Assistant Circuit Attorney Rosskopf and an indictment was returned.

"Detectives Schenck and Ryan took the doctor to headquarters.

"'I cured Walter,' said Dr. Wright; 'if not he can come back. He was well when examined by other doctors, including members of the Board of Health. By studying at Washington University and working at nights he may have injured his health. If he has tuberculosis again, it is a return of the malady.'"

Will the general public learn anything from this case? Isn't it true that the suckers are waiting for a turn? They seem to think that we are jealous of the "wonder worker." Were the medical profession responsible for the present indictment there are many who would talk of his being a martyr. The "250 per" looks as if he is in the business for what there is in it, and the fact that he keeps his "wonderful" secret strictly to himself does not indicate that he is actuated by any particular bulge of humanitarian ideas. Perhaps not now, but eventually he will be recognized according to his merit.

Treating the Sick, but not "Practicing Medicine."

THE recent decision of Circuit Judge Thurmond, at Warrensburg, in the case of the State Board of Health vs certain Christian Science Healers, adverse to the Board, emphasizes the need of a broader interpretation of the expression "practicing medicine" than is at present given in it in the courts. We have lately had brought to our attention a rather interesting instance of how osteopaths practice medicine within the narrow meaning and yet avoid the consequences of violation of the laws regulating medical practice. There are two classes of osteopaths, the first leaves school with a firm belief in osteopathy as a cure-all and retains the belief; the second comes from school with an established belief which is soon shaken by the facts of daily experience, and such an one either takes up medicine regularly, or prescribes some what according to the method here told. Of course the objectionable feature about osteopathy is not the manipulation, but the fact that it is held that it can be successfully employed in the cure of all diseases, the orthodox osteopaths will not admit that drugs are necessary in any case, and persist in treating all classes of cases with their manipulations alone.

The instance above referred to: a "lady osteopath" had on hand a patient with "blood trouble," for which persistent manipulation was not sufficiently effective, something was lacking, so she went to her physician friend and asked what drug was used in such a case, getting the information with some detail. How did she avoid the necessity of writing a prescription? How did she "practice medicine" and treat her patient medically, yet avoid the legal penalty for having done so? Simply by telling the patient what to take and how to take it, and having the patient secure the drug at a pharmacy.

The great difference between osteopathy and Swedish movements—outside of the technical differences—lies in this: the osteopath will resort to any means to keep the patient away from regular practitioners, while the masseur acts as a helper to the physician and carries out his directions in the case. This difference cannot be too frequently impressed on the medical profession and shoud be made clear to the genera public as well. Too often physicians are careless in this and refer patients who need massage, intelligently applied, to osteopaths, forgetting that the masseur is always a friend and assistant while the osteopath is usually an enemy and only a friend when he can see direct personal advantage in being so; the osteopath is never a masseur. C.

DURING the summer of 1908, two thousand fourteen medical studenta, of whom one thousand fifty-one were women, attended the several universities of Switzerland. Of this number five hundred thirty were natives of hat country, thirty-three being women.

Committees of the St. Louis Medical Society.

The Council of the St. Louis Medical Society has lately elected its committees for the year, and we are now able to form some idea of the work which is to characterize 1908, appearances indicate that the year is to be one of decided progress. The new committees introduce a few new names, just normally showing a healthy endeavor to develop the working force. President Nicholson and the Council will be aided by the following:

Membership: H. L. Nietert, A. C. Kimball, F. J. V. Krebs.

Program: Jno. Green, Jr., D. L. Harris, L. Rassieur.

Publication: Thos. A. Hopkins, Geo. Gellhorn, E. J. Goodwin.

Library: Ella Marx, Geo. Homan, R. Wobus.

Public Health and Legislation: Chas. Shattinger, Jas. Stewart, F. Hinchey.

Medico-Legal: W. Engelbach, W. W. Graves, R. Fuhrmann.

ST. LOUIS ITEMS.

Marriage of Dr. N. Allison.—Dr. Nathaniel Allison, of 5003 McPherson avenue, was married in Chicago on January 9th, to Miss Marion Aldrich, daughter of Mr. and Mrs. William Howard Aldrich, of 4519 Greenwood avenue. Dr. Allison and his bride sailed on the 13th from New York for Europe to spend their honeymoon.

A joint session of the Surgical and Urologic sections of the St. Louis Medical Society is to be held on Feb. 27. The speaker of the evening is to be Dr. Louis E. Schmidt of Chicago who has chosen for his subject, "Vesical Symptoms Due to Diseases External to the Bladder." Medical and surgical aspects of the subject will be considered.

Death of Dr. H. L. Goodman.—The many St. Louis friends of Dr. H. L. Goodman, of New York, are shocked by the news of his recent suicide during an attack of melancholia. Dr. Goodman removed to New York a number of years ago, and had been remarkably successful in practice there, occupying a position in the city department of health and doing a lucrative practice. He had been for some time indisposed as a result of overwork, his ailment taking the form of melancholia. He was defeated in his first attempt at suicide on the 10th, when he took a large dose of antipyrine. On the 12th he secured and took a fatal dose of carbolic acid. Dr. Goodman graduated in 1893 from the Old Missouri. Many of our readers will remember him pleasantly and will with us regret his sad death.

The Medical Society of City Hospital Alumni has elected the follwing officers for 1909:

President, Walter Baumgarten; vice president, J. C. Falk; secretary, W. H. Luedde; treasurer, E. Lee Dorsett.

President Baumgarten has appointed the following committees:

Executive Committee—L. J. Oatman, chairman; F. J. Taussig, Francis Reder.

Committee on Scientific Communication.—W. Fischel, chairman; R. J. Bunch, O. R. Engleman.

Committee on Publications.—W.T. Coughlin, chairman; Otho F. Ball, J. M. Brady.

Committee on Entertainment.—F. Hinchey, chairman; O. H. Campbell, Geo. B. Kroeger.

Committee on Public Health and Municipal Affairs.—Amand Ravold, chairman; L. H. Behrens, L. Rassieur.

St. Louis Medico-Legal Society.—A joint meeting of physicians and lawyers was held on the evening of January 15th, at which the preliminary organization of the St. Louis Medico-Legal Society was effected. The purposes of the society as outlined will be reform in the existing coroner system; the development of more intelligent medical expert testimony; the establishment of an expert commission on insanity; interest in laws affecting affecting public health; and any matters which may be mutually of in terest to the two professions. Among the lawyers present at the conference were Charles P. Johnson, Selden P. Spencer, Judge Charles Claflin Allen, Walter B. Douglas, former Circuit Attorney A. N. Sager, Jesse McDonald, Judge M. N. Sale, Loomis Johnson, Walter D. Coles, Daniel G. Taylor, J. C. Jones, I. V. Barth, Percy Werner, Circuit Attorney Jones and Robert Holland. The following physicians were present: Drs. F. R. Fry, M. A. Bliss, R. B. H. Gradwohl, G. McConnell, Hugo Ehrenfest, N. B. Carson, W. E. Fischel, W. B. Outten, S. I. Schwab, R. L. Thompson, H. J. Scherck, M. Clopton and L. N. Warfield. Former Circuit Attorney A. N. Sager was elected temporary president and Dr. H. J. Scherck, temporary secretary.

Johns Hopkins University recently received $750,000 from Mr. Henry Phipps, the steel magnate and philanthropist of Pittsburgh. The terms of the gift provide for a four-story addition to the Johns Hopkins Hospital, and also for a chair in the university.

BYRON ROBINSON'S NOTE-BOOK.

THE PERIURETERAL OR CELLULAR COAT IN TUBERCULAR URETERITIS.—The ureteral mucosa ulceration initiates an inflammatory process—a round-celled infiltration which indurates the periureteral cellular tissue resulting in the well-known rigid, stiff, tubercular ureter—resembling a lead pencil. Frequently the periureteral cellulitis becomes a thick indurated mass, a barrier against ureteral perforation. The tubercle bacillus becomes accompanied by other pathogenic germs—mixed infection—and extensive inflammatory products induces rigidity and induration in the ureteral cellular coat, hence the sensation, during palpation of a tubercular ureter, of a lead pencil.

THE URETERAL MUSCULARIS IN TUBERCULAR URETERITIS —The ureteral muscularis long withstands intact the tubercular invasion from the ureteral mucosa. Not, infrequently from a tubercular ulcer of the ureteral mucosa arises a cicatricial distortion, contraction of the ureteral muscularis. The ureter may be diminished in length or lumen by the cicatrization, and consequently compromised in function. In tubercular ureteritis an important factor in diagnosis is the dislocation of the ureter and its vesical orifice through contraction, diminution of length. Doubtless during hydro-ureter a compensatory hypertrophy of the muscle in the ureteral wall enables ureteral peristalsis to maintain for a considerable time.

ALL abdominal pain is not perityphlitis —think of all other visceral colic. There may be ureteritis, cholecystitis, colitis, oviductitis, pancreatitis, duodenitis, myometritis. The chief mistake made by physicians in regard to perityphlitis is that the subject has colitis instead of perityphlitis.

THE late Nicholas Senn conducted one of the largest and most instructive surigeal clinics the world has ever seen.

Visceropexy, hysteropexy and nephropexy is becoming shamefully prevalent. Young neurotics are the victims.

CHOLERA IN ST. PETERSBURG.—A fresh outbreak of cholera in St. Petersburg accompanied a cold wave there toward the end of December. Thirty-one new cases were reported on December 25, and thirteen deaths, making a total of 225 persons in the hospitals suffering from the disease.

THE REVIEWER'S TABLE

Books, Reprints, and Instruments for this department, should be sent to the Managing Editor, Century Building, St. Louis.

OTOLOGY.

A. F. KOETTER, M. D.

Histology of Labyrinth Suppurations.—Ruttin (Wien)—Passow's Beitraege, Bd. I. p. 388. Case I. Man of 41 with chronic middle ear suppuration entered hospital in unconscious condition. Death occurred some days after radical operation had been performed. Histological findings: Stapes pushed into the vestibule annular ligament destroyed. In the perilymphatic space of the vestibulum but little purulent exudate, lumen of utricle and semicircular canal free, but sacculus, cecum vestibuli and rest of ductus cochlearis filled with pus scala tympani within reach of round window filled with granulation tissue. In the scala vestibuli thick accumulations on Reissner's membrane.

Case II. Patient of 34 with chronic middle ear suppuration of right ear. Radical operation. Death from lung tuberculosis. In the niche of the oval window tubercular granulation tissue, annular ligament destroyed, stapes dislocated inward, perilymphatic space of vestibule filled with tubercular granulation tissue. Spiral lamina broken through in two places, namely, in the basilar membrane and in the middle third of the bony lamina. Membrane of round window totally dissolved. Scalas filled with granulation tissue, partly cheesy. Bulging of Reissner's membrane against the perilymphatic space. The described changes are found only in the first half convolution.

Case III. Preparation from a man dead of lung tuberculosis. Annular ligament destroyed, pus in vestibulum extending into the scala vestibule of the vestibular pad of cochlea. Riessner's membrane bulging convexly against the scala vestibuli, thickened. Semi-circular canals, utricle, saccule, canalis remains free from inflammatory changes. In the scala tympani connective tissue with individual spicula of bone. Ductus cochlearis dilated. Changes are found only in the lower half of the basal convolution. It was rather remarkable that the suppuration in all three cases was confined to the lower half of the basal convolution. In all three cases the pars superior labyrinth was clear, and the extension of the suppuration from the perilymphatic space of the vestibulum went to the scala vestibuli, respectively to the initial part of the ductus cochelaris. Author gives the following mechanical explanation for this: The lower half of the basal convolution

remains in every position of the head the lowest part of the cochlea, in which the pus, coming through the window or from the vestibulum, accumulates. Is this infection a bland one, viz., a rapid flooding of the whole labyrinth with pus, does not occur, the pus that has entered the basal convulution will, in spite of all head movements, be limited to the first semi-convolution? Author compiles the result of his examination into the following sentences:

1. The circumscribed chronic suppuration in the cisterna perilymphatica will cause, from mechanical reasons (burrowing of pus on account of severity) an involvement of the perilymphatic space of the scala vestibuli in the lower half of the basal convolution.

2. If a rupture occurs in the endolymphatic space, the point of rupture is always a deep-seated point of the membranous labyrinth.

3. The chronic circumscribed suppuration of the basal convolution can from mechanical reasons be limited to the lower half of the convolution.

4. The chronic circumscribed suppuration in the scala tympani to rupture through the cochlear window usually remains confined to that part.

5. Suppurations which break into the vestibulum have on account of the mechanical relation (burrowing of the pus) an involvement of the cochlear apparatus following. Suppurations rupturing through the round window are generally limited to the cochlear apparatus, to the lower half of basal convolution. The former is therefore prognostically more unfavorable.

A Rare Disturbance Following Submucous Resection of Nasal Septum.— (Mueller, Muenchener Med. Wochenschrift).—A patient of 28 in whom one-half year ago the septum had been resected according to Killian's method returned with the complaint that on inspiration and expiration from the nose a soft high whistle was heard. Objectively on inspiration and expiration a tone corresponding to a^6 of the Galton whistle was heard. On left side of septum at the lower end of cartilaginous incisions a round hole 2 mm. in circumference was visible, on the right side this hole is not seen, but covered by a fold drawn over the perforation from the anterior margin of the hole This fold is set in motion in periodical oscillations by the in and out going air caused the whistling tone. Healing by extending the perforation and removing the fold, took place.

MEDICAL ASSOCIATION OF THE SOUTHWEST.

Abstracts of papers read at the Third Annual Meeting, held at Kansas City, Mo., October 19-21, 1908.

Renal Calculus.—Dr. D. W. Basham, Wichita, Kan., read a paper on this subject, in which he reported cases and discussed the surgical treatment.

DISCUSSION.

Dr. A. K. West, Oklahoma City: Some phyiscians are of the opinion that kidney stone is much more common in one locality in England than in another. In the United States there does not seem to be any stone district. I believe that the character of the water we drink has little, if anything, to do with the formation of renal calculus. I think, however, that certain other conditions predispose to renal stone. Nephritis following scarlatina is likely to be followed by calculus formation. Some authorities have called attention to the fact that clumps of bacteria may form a nucleus for the precipitation of stone, but this has not yet been proved. If a stone forms from acid urine it may be counteracted by rendering the urine alkaline. Unless one has a stone to deal with, if the alkaline urine be alkalinized the patient is made worse. After the urine is too alkaline it should be acidified, if possible. Benzoic acid lays claim to that possibility, but I doubt its efficacy. I differ with most surgeons concerning the number of patients with renal colic which should be operated on. Since there are recurrent attacks, with no evidence of pus, except the passage of calculi with pain for an hour or two at a time, and no after symptoms, I do not refer such patients to surgeons. When there is pus formation or obstruction, pyonephrosis or hydronephrosis, the condition becomes surgical, but to operate on a patient with recurrent renal colic, without any other symptoms and with no constitutional deterioration, is a mistake, because the history of many patients is that they will have three or four attacks and thereafter have no further trouble.

Dr. A. R. Kiefer, St. Louis: Location of stone in the ureter, as determined by the character of the pain, the pain being referred to the testicle, I will say that this is a point to which Dr. Bryson gave considerable attention.

He stated that in all cases in which the stone was above the brim of the pelvis, the symptoms were never referred to a poin below the brim of the pelvis, but that if th stone was along the course of the ureter, ther

were reflex symptoms in the testicle, and not before that.

Dr. W. T. Elam, St. Joseph, Mo.: The consensus of opinion as to treatment is, I believe, that as soon as a diagnosis of stone in the kidney is made the time has arrived when the condition should be considered surgical. There is no chance of dissolving such a stone or stones by any medicine. When nephrectomy is necessary in connection with pylonephritis or pyonephrosis or hydronephrosis, there is not that danger connected with the operation that there would be had one not a diseased kidney to deal with. Primary nephrectomy, however, is to be avoided, if possible. Nephrotomy or nephrolithotomy, with drainage etsablished, is the operation, but if it is found that the kidney is so badly disorganized that it can not be saved, then secondary nephrectomy should be done. That operation is not attended with a large mortality—at least, it has not been so in my hands.

(To be continued.)

A bilateral thickening of the nasal septum means either an old traumatism or gumma. —Amer. Jour. of Surg.

RENEW YOUR SUBSCRIPTION.—According to a recent ruling of the Post-office Department, no one is to be considered a subscriber to this magazine unless he shall sign a subscription blank, authorizing the publishers to continue same to his address. As we do not wish to send the FORTNIGHTLY to anyone not desiring same, we must again request that all subscribers wishing the journal, should fill out the blank found in this issue and return by early mail.

DR. S. A. KNOPF AND THE PHILADELPHIA "NORTH AMERICAN."— Our readers will remember that a little better than a year ago the American public was shocked by certain statements relative to sufferers from tuberculosis, which were attributed to Dr. S. A. Knopf by the "North American" of Philadelphia. It will be generally satisfying to learn that Dr. Knopf's suit against the paper has been settled in a manner highly satisfactory to him. The paper published on its front page a complete retraction, paid all of his expenses in the matter, his attorney's fee and gave him $5,000 in actual money, a total of about $10,000. Dr. Knopf turned the $5,000 over to the National Association for the Study and Prevention of Tuberculosis, to be used at the discretion of its directors for the consumptive poor.

FAVORITE PRESCRIPTIONS

TONSILLITIS.—Seibert's prescription for tonsillitis follows:

Potass. iodidi	1 gm.
Tinct. iodi	2 gm.
Acidi carbolici	gtt. x
Aquae, ad	120 cc.

M. Sig.: Teaspoonful every hour. The patient should drink nothing for at least ten minutes atfer each dose. Also paint the tonsils with a saturated alcoholic solution of resorcin every other day.—Medical Summary.

HYPNOTIC.—The following prescription has been used with gratifying results:

Veronal	ʒss
Trional	grn. xv
Tinct. vanillae	*m* viii
Alcoholis	ʒiss
Glycerini, q. s. ad	ʒii

M. Sig.: Two teaspoonfuls in wineglass of water, to be repeated in half an hour if necessary.—Ex.

SCABIES.—The treatment of scabies is simple. A cure can entirely be accomplished by external applications. Such drugs should be selected that will destroy the parasites, their eggs, and at the same time relieve the secondary eruption. The following combination will serve for this purpose and has, in many instances, given immediate relief and brought about a cure in from one to to two weeks' time:

℞	Beta-naphtholis	gr. xx
	Sulphuris sublimati	ʒj
	Balsami peruvianae	fʒj
	Unguenti zinci oxidi	ʒj

Misce. fiat unguetum. Sign.—apply locally twice daily to the parts affected.

Request the patient to take a hot bath every second evening, after which freely apply the ointment before retiring.

It is of importance that, after the disease has been cured, the clothing should be exposed to a heat of 212 deg. F., in order to destroy any parasites which may adhere to them and thus prevent renewal of the affection.—J. V. Shoemaker.

OINTMENT FOR THE RELIEF OF PRURITUS ANI.—Lockhart Mummery (The Practitioner, November, 1908), prescribes the following ointment, which is said to give relief in itching about the region of the anus, especially if applied at night:

℞	Calomel	ʒii
	Bismuth subnitrate	ʒiss
	Tincture of aconite	*m*viii
	Glycerin	ʒii
	Ointment of elder flowers	ʒi

M. Ft. unguentum.

THE MEDICAL FORTNIGHTLY

A Cosmopolitan Biweekly for the General Practitioner

The Medical Fortnightly is devoted to the progress of the Practice and Science of Medicine and Surgery. Its aim is to present topics of interest and importance to physicians, and to this end, in addition to a well-selected corps of Department Editors, it has secured correspondents in the leading medical centers of Europe and America. Contributions of a scentific nature, and original in character, solicited. News of Societies, and of interesting medical topics, cordially invited.

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Contributors should understand that corrected typewritten copy is essential to clean proof and prompt publication, and is much more satisfactory than manuscript. Original articles should be as condensed as justice to the subject will allow.

Editorial offices in St. Louis and St. Joseph, where specimen copies may be obtained, and subscriptions will be received.

Contributions and books for review should be addressed to the Managing Editor, 319 and 320 Century Building, St. Louis, Mo.

CLINICAL THERAPEUTICS

A forum of original experience, to which scientific contributions are invited. Responsibility for views promulgate imited to author.

NOTES ON MODERN PHARMACEUTICAL REMEDIES.*

PEPTO MANGAN (GUDE).

Description.—A clear, limpid, reddish-brown fluid, neutral in reaction and of pleasant taste and odor.

Formula.—Each half ounce contains ¾ gr. iron and ¼ gr. manganese, in intimate organic combination with peptones, alcohol content, 16 per cent.

Action.—Pepto-Mangan (Gude) is a true hematic, increasing both the number of red corpuscles and percentage of hemoglobin. It is tonic in its effect and promotes bodily nutrition by improving the quality and increasing the quantity of the working elements of the blood.

Indications.—Pepto-Mangan (Gude) has been recommended in all forms of malnutrition resulting from, or attended by anemia. Also in chlorosis; the anemias of adolescence; convalescence from acute diseases; prolonged lactation; after severe hemorrhages, and whenever a hematopoietic and reconstructive is needed.

Dosage.—One tablespoonful, three times a day, after each meal, in water, milk, sherry, or non-acid medium.

Special Considerations.—Pepto-Mangan (Gude) was one of the earliest products to demonstrate the value of organic combinations of iron and manganese. It is stable, palatable, neutral in reaction, contains no free iron, and, as a consequence, is attended by none of the objectionable features of inorganic iron, such as gastro-intestinal irritation, constipation, arrest of gastro-intestinal secretions, etc. It is uniform in quality and strength, and it is claimed that it can be adminstered to the youngest, or most debilitated patient with minimum interference with gastric or intestinal functions. It does not discolor or injure the teeth.

* American Medicine. (Bibliography omitted to save space.)

A feeling of discomfort in the mouth while eating may be the first signs of a calculus in one of the salivary ducts.—Am. Jour. Surg.

PRURIGO.—Alkaline baths followed by a carbolized ointment and teaspoonful doses of elixir iodo bromide of calcium compound (Tilden) three or four times a day will be found of special value in the papular eruption known as prurigo.

SUICIDE OF SCHOOL CHILDREN IN BERLIN.—The suicides of school children increasing year by year constitute an especially sad phenomenon in the hyigene of education. In the higher schools of Prussia, from 1880 to 1903, an average of fourteen pupils took their lives annually; in 1907 the statistics show twenty, and in 1908, so far, twenty-three suicides among these pupils. Removal of the causes leading to some of these suicides among the older school children justifies the employment of school physicians even in the upper schools. So far school physicians have been officially installed only in the lower graded schools. Our neighboring community, Charlottenburg, has made a satisfactory beginning in this line by the appointment of medical inspectors for the high schools also. We may hope that this example will soon be followed by other cities. —Cor. Jour. A. M. A.

MEDICAL MEMORANDA.

Of Direct Interest to Bathers And Physicians—The new Park Hotel Bath House at Hot Springs, Ark., thas been remodeled with the view of giving every possible therapeutic result. Therapeutic effects attained by baths away from Hot Springs are two classes, those obtained by hydrotherapy and those from thermotherapy, to the later should be added, under a sub-head the effects of the warm carbonated bath, known as the Nauheim. All of the effects of hydrotherapy and thermotherapy are to be obtained in the new Park Hotel Bath House and, what is more improtant, here also is to be obtained that which, so far as is known, can not be obtained in any other place in the world, viz.: the effects of "Hot Springs Therapy". In fact this latter fact is almost the only one offered by the other bath houses at Hot Springs. "Hot Springs Therapy" may seem to be a new expression to physicians and scientists who have, through lack of information, supposed the benefits, obtained by thousands of patients at Hot Springs annually, came from the heat effect or water effects of a merely hot bath. If that were true hot baths anywhere would have the same effects. On the contrary the "Hot Springs effect" is not due to hydrctherapy or thermotherapy but to radio-activity. This water is highly radio-active, due to the presence of a radio-active gas which is lost upon long exposure or re-heating of the water. The immediate effect of this radio activity of the water upon a human subject partially or wholly submerged therein is increased cell activity, known in science as increased metabolism. This increase in metabolism is not given by hydro- or thermo-therapy, it is sought by physicians in a class of drugs which they call alteratives but it is in no way to be obtained in like degree but through "Hot Sprngs Therapy"—now, is the new expression justified? The increase in metabolism is shown in the same way and just as promptly as when a furnace draft is opened. Then ensues an increase in combustion and an increase in the production of heat; in the subject in the Hot Springs bath the increased metabolism, which means several things, on of which is increased combustion is promptly shown by a rise of temperature, going up one, two or even three degrees, depending partly upon the patient's condition but more upon the amount of stale water from open cooling tanks which has been used to temper the fresh hot water. As has been mentioned, this radio-activity is lost when the water is long exposed in open tanks. So if water cooled in such manner is used to temper the bath very irregular effects are obtained as sometimes the water is more stale than at other times. This trouble has been obviated at the new Park Hotel Bath House for the first time in the history of Hot Springs by the installation of a system of refrigerating coils. So the water at this bath house is no longer cooled in open tanks but in closed pipes and is delivered cool at the tubs with no less of the radio-active gas which is the whole source of "Hot Springs Therapy." This will result in a regularity of effect in the production of increased metabolism not to be obtained elsewhere. Increased metabolism causes: —1. Increased assimilation, increase of red blood, increase in strength, in weight. Eighty per cent of the people bathing at Hot Springs gain in weight unless the baths are especially ordered and conducted on a depleting plan. A pound gain per day is frequently seen and a gain of twenty pounds in ten days has been recorded. 2. Increased elimination; not only does this take place through the skin during the bath but the increased cell activity in all parts of the body prepares retained poisons for elimination through skin, kidneys, liver and bowels, often throwing so much effete material into these excretory organs that they must be aided by diuretic waters and purgatives to carry it off. 3. Another effect not directly a part of increased metabolism is a blood pressure in thearteries. The normal blood pressure will support a column of mercury 12 5 to 130 millimeters in height. When from disease the blood pressure rises as it

does, sometimes to over 200 mm. anyone can understand that there is always trouble and often danger. The carbonated bath is used the world over to reduce blood pressure and many patients with hardened arteries go to Germany for the Nauheim bath, not knowing that the bath at Hot Springs lowers the blood pressure 20 mm. on an average. A fall of 50 mm. during a single bath has been noted. Not only these effects of Hot Springs Therapy are to be obtained at this new Park Hotel bath house but also every hydro- and thermo-therapeutic effect obtainable anywhere. The new equipment carries with it every modern apparatus in these lines, showers, needle baths, spinal and perineal douches, the sitz, etc., etc., all controlled from a central table in charge of a trained hydrotherapeutist. Another improvement introduced in this new bath house is the institution of a Superintendent of the Bath House in each branch of this establishment. Attendants are used to give the baths and handle the bathers but every step is carried out according to the bath directions and under the watchful eye of the superintendents, a man and a woman trained in the use of instruments of precision.

LIPOMA of the scalp may also simulate a wen. Both grow gradually, are semi-fluctuating and are movable on the deeper parts. Aspiration for diagnostic purposes is not a wise procedure; for if the tumor be a cyst, the contents may readily flow out through a puncture hole, making it difficult to remove the cyst wall at operation.—American Jour. of Surgery.

INTERNATIONAL MEDICAL CONGRESS.—Plans have been perfected for the American party to attend the International Medical Congress at Budapest next August. The arrangements for transportation are in the hands of Thomas Cook & Son, and this insures first class accommodations, and satisfaction in all details. Rooms have been reserved at the best hotel in Budapest, but it will be necessary for us to know approximately the number who will attend at an early date in order that the reservations may be augmented if necessary. A very low round trip rate will be announced, including all expenses, and the undersigned be pleased to answer any inquiries in regard to the trip to the Congress, and will send program and itinerary to any who are interested. Communications in regard to transportation and hotel accommodations should be addressed to Dr. Chas. Wood Fassett, St. Joseph, Mo.

POST-GRIPPAL COMPLICATIONS.—If there is one particular feature which characterizes the genuine influenzal attack, it is the decided and sometimes intense prostration that remains after the subsidence of the acute symptoms of the disease. This general vital "set back" is oftentimes entirely out of proportion to the severity of the original grippal attack, and the most robust patients are sometimes the most severely prostrated. In addition to the general devitalization, la grippe is extremely likely to be accompanied with or followed by such troublesome complications as otitis, neuritis, sinus inflammation, gastro-intestinal derangements, resistant and obstinate bronchial catarrhs and, more dangerous than all, a peculiar, more, or less characteristic, asthenic form of lobular pneumonia. The skill of the physician and the vital resistance of the patient are often taxed to the utmost in a combined effort to induce final recovery. Anemia, to some degree, is almost always brought about by the combined devializing power of the disease and its complications, and convalescence is likely to be tardy and tedious. An easily borne, readily assimilable hematinic does much to hasten recovery and pepto-mangan (Gude) is in an especially eligible method of introducing the much needed berric and manganic elements, without producing or increasing digestive difficulty. In no condition does this well tried hematic remedy evidence it undoubted reconstructive power more certainly than in the treatment of post-grippal convalescence.